AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-14. (Canceled)

15. (Previously Presented) A method of programming a machine tool, the machine tool comprising at least three mutually perpendicular linear axes, one of a rotary axis and a rotation axis, and a toolholder mounted to a tool rest, the toolholder including a cutting tool defining a lead angle or a trailing angle with respect to a workpiece, the method comprising the steps of:

independently moving one of the rotary axis and rotation axis about an axis other than a centerline of the workpiece to a specified position in synchronization with a movement of one of the at least three mutually perpendicular linear axes,

maintaining the lead angle or the trailing angle constant as a vector of movement of at least one of the linear axis is changed,

whereby the lead angle of the cutting tool is used to anticipate interference between the cutting tool and the workpiece.

16. (Currently Amended) A method of programming a toolholder with a cutting tool, comprising the steps of:

reversing a direction of rotation of a workpiece, and

positioning the cutting tool on opposite side of a centerline of rotation of the workpiece,

whereby a flank face of the cutting tool is utilized to perform a machining operation, and

~~wherevy~~ whereby a lead angle of the cutting tool is used to anticipate interference between the cutting tool and the workpiece.

17. (Previously Presented) A method of programming a machine tool comprising at least three mutually perpendicular linear axes, one of a rotary axis and a rotation axis, and a toolholder mounted to a tool rest, the toolholder including a cutting tool, the method comprising the steps of providing a macro including a geometry of a workpiece to be machined and a geometric relationship of the cutting tool with respect to the workpiece, whereby the macro calculates the movement of the at least three mutually perpendicular linear axes, and the movement of one of the rotary axis and rotation axis about an axis other than a centerline of the workpiece that is required to maintain a specified cutting tool geometry as the cutting tool proceeds across a surface of the workpiece, and whereby a lead angle of the cutting tool is used to anticipate interference between the cutting tool and the workpiece.

18. (Original) The method according to Claim 17, whereby the macro calculates a velocity of the cutting tool for each axis.

19. (Original) The method according to Claim 17, whereby the macro varies a distance between the cutting tool and the workpiece such that a clearance angle of the cutting tool remains constant as the cutting tool moves toward a centerline of the workpiece.

20. (New) The method according to Claim 17, whereby the cutting tool defines a first trailing angle during a roughing pass and a second trailing angle during a finishing pass, the second trailing angle being different than the first trailing angle.

21. (New) The method according to Claim 17, whereby the cutting tool includes a cutting tool nose radius that is substantially concentric with a longitudinal axis of the toolholder.

22. (New) The method according to Claim 17, whereby the cutting tool is positioned on one side of a centerline of the workpiece when the workpiece rotates in a first direction,

and wherein the cutting tool is positioned on an opposite side of the centerline of the workpiece when the workpiece rotates in a second, opposite direction.

23. (New) The method according to Claim 17, whereby a clearance angle of the cutting tool is adjusted with respect to the geometry of the workpiece.

24. (New) The method according to Claim 17, whereby the lead angle of the cutting tool is adjusted with respect to the geometry of the workpiece.

25. (New) The method according to Claim 17, whereby a rake face of the cutting tool is substantially perpendicular to a longitudinal axis of the toolholder.

26. (New) The method according to Claim 17, whereby the machine tool back calculates a specific velocity for each linear axis to reach a specific portion of the workpiece at a specified point in time.